

From glowbugs@theporch.com Wed Oct 2 15:57:35 1996  
Return-Path: <glowbugs@theporch.com>  
Received: from uro (localhost.theporch.com [127.0.0.1]) by uro.theporch.com  
(8.8.0/AUX-3.1.1) with SMTP id PAA24185; Wed, 2 Oct 1996 15:49:44 -0500 (CDT)  
Date: Wed, 2 Oct 1996 15:49:44 -0500 (CDT)  
Message-Id: <199610022049.PAA24185@uro.theporch.com>  
Errors-To: conard@tntech.campus.mci.net  
Reply-To: glowbugs@theporch.com  
Originator: glowbugs@theporch.com  
Sender: glowbugs@theporch.com  
Precedence: bulk  
From: glowbugs@theporch.com  
To: Multiple recipients of list <glowbugs@theporch.com>  
Subject: GLOWBUGS digest 310  
X-Listprocessor-Version: 6.0c -- ListProcessor by Anastasios Kotsikonas  
X-Comment: Please send list server requests to listproc@theporch.com  
Status: 0

#### GLOWBUGS Digest 310

Topics covered in this issue include:

- 1) Re: Greetings and Intro,  
by ralph.hartwell@emachine.com (Ralph Hartwell)
- 2) Name for thermionic components  
by Paul Bernhardt <bern@ppdu.nrl.navy.mil>
- 3) Introduction  
by John Fletcher <johnf@innotts.co.uk>
- 4) Re: digest  
by "Brian Carling" <bry@mail1.mnsinc.com>
- 5) Controversy Already!  
by Bob Marsh <bmarsh@hicom.net>
- 6) Re: 6V6 Xtal Osc from 1950's  
by W4AOS@aol.com
- 7) Re: Tube gear (fwd)  
by "Brian Carling" <bry@mail1.mnsinc.com>
- 8) Re: I 'ear a passle o' glowbugs about ta swarm.....(:+}}.....  
by "Brian Carling" <bry@mail1.mnsinc.com>
- 9) Re: 6V6 Xtal Osc from 1950's  
by "Brian Carling" <bry@mail1.mnsinc.com>
- 10) Re: 6V6 Xtal Osc from 1950's  
by Bob Roehrig <broehrig@admin.aurora.edu>
- 11) Re: Recycling  
by sigcom@juno.com (Stephen M Smith)
- 12) Re: 6V6 Xtal Osc from 1950's etc.  
by rdkeys@csemail.cropsci.ncsu.edu
- 13) Homebrewing sites  
by dabell@aloha.net (David and Shari Abell)

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Date: Tue, 1 Oct 1996 20:36:00 GMT  
From: ralph.hartwell@emachine.com (Ralph Hartwell)  
To: glowbugs@theporch.com  
Subject: Re: Greetings and Intro,  
Message-ID: <96100115450617132@emachine.com>

M>In any case, I HEREBY PROPOSE we use the words "toobe" and 'toobes" in when  
M>referring to thermionic emission electronic devices, and the like.

Hmmm... being somewhat of a solid state type myself, I prefer the term  
"Hot Emitter FET".

Ralph W5JGV

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. QMPro 1.53 . A big enough gun will adjust any attitude.

-----  
Date: Tue, 1 Oct 1996 17:17:53 -0400 (EDT)  
From: Paul Bernhardt <bern@ppdu.nrl.navy.mil>  
To: glow bugs <glowbugs@theporch.com>  
Subject: Name for thermionic components  
Message-ID: <Pine.A32.3.91.961001171429.36628D-100000@ppdu.nrl.navy.mil>

In the United States they call them TUBES  
In France they call them LAMPS  
In England they call them VALVES  
But I like HOLLOW STATE DEVICES the best.  
Paul Bernhardt, KF4FOR

-----  
Date: Tue, 1 Oct 1996 23:20:33 +0100  
From: John Fletcher <johnf@innotts.co.uk>  
To: Multiple Recipients of the List <glowbugs@theporch.com>  
Subject: Introduction  
Message-ID: <199610012220.XAA03742@carlton.innotts.co.uk>

Hello Glowbuggers!

I subscribed to this list a few days ago and this is my first posting. I got  
my licence in June 1975 and used a single 6V6 oscillator on 40 metres. This  
was inspired by the Bare Essentials rig built by my friend Jeremy G4EHX. Two  
months later I bought a Codar AT5, 10 watts input on 160 and 80 AM and CW,

which I used with a Hallicrafters S20 Sky Champion. I still have the AT5 which I hope to use again soon. I've not been active on HF for some years but I moved house last year and now have a fairly large garden (by English suburban standards) and this week I erected a W3EDP antenna with its counterpoise in the cellar. I made my first contact on that aerial this evening; 579 from DL0AQB using 4 watts out on 40 metres. I think my discouraging early attempts at QRP were let down by an inefficient aerial.

One winter project here is to put a WS128 set back on the air. This is a 1960s military transmitter/receiver covering 2 to 8MHz and using battery valves. I think it was the last of the valve "spy sets". I'll keep you informed.

Glad to be a part of this list, and I read every posting with increasing enthusiasm.

72/73 de John G4EDX G-QRP 2038

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Date: Tue, 1 Oct 1996 16:45:36 +0000  
From: "Brian Carling" <bry@mail1.mnsinc.com>  
To: jdy@whitney.ufl.edu, glowbugs@theporch.com  
Subject: Re: digest  
Message-ID: <199610012344.TAA13701@user2.mnsinc.com>

DON'T ASK for big messages - you will get the senders in BIG trouble

-  
like what happened to me in the dreaded qrp-l PC group!  
Bry, AF4K

> Date: Tue, 1 Oct 1996 10:48:11 -0500 (CDT)  
> Reply-to: jdy@whitney.ufl.edu  
> From: John D Young <jdy@whitney.ufl.edu>  
> To: Multiple recipients of list <glowbugs@theporch.com>  
> Subject: digest

> Is glowbugs available in digest form. I like reading the  
> messages but would be happier with one big one per day.

>  
> 73 John WA8KNE

>  
>  
>  
Brian Carling in Gaithersburg, Maryland, USA  
bry@mnsinc.com  
<http://www.mnsinc.com/bry/>

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Date: Tue, 01 Oct 1996 19:46:43 -0400  
From: Bob Marsh <bmarsh@hicom.net>  
To: Glowbugs List Server <glowbugs@theporch.com>  
Subject: Controversy Already!  
Message-ID: <3251AD63.11E5@hicom.net>

I love it!

My first post and I've already formented a major controversy! Actually, I picked up "Toobz" from a post on the Boatanchor list. I usually refer to them as "Those Glowing Things That Burn Your Fingers When You Touch Them" (TGTTBYFWYTT). Supposedly, that's where all the "voodoo stuff" is stored. Anyway, I'm obviously in the right place.

I'd like to build me a nice "valve" based QRP transmitter and receiver, and possibly a VFO for CW only operation. Unfortunately my junk box is woefully short of stuff, since I've only been at this for a couple years. I have a nice Lambda Mod 71 power supply with both 6VAC and 0 - 500VDC @ 0 - 200Ma. I plan on using this as my "All purpose power supply".

What I could use is a nice simple design for this rig. I do have a bunch of tubes I got from a guy who was throwing them out, but haven't inventoried them yet. I also saw the list here on some useful tubes. I do have one (count 'em) that's a metal jobby. I also have one colorburst crystal and a few 40m FT-243 crystals. The rest I'd have to scrounge (but I'm pretty good at that).

Maybe I'll get off my butt and inventory those tubes I have. It may turn out to be a gold mine after all.

So, there it is. Does anyone know of a source for some building plans? I'd be happy to hear from you!

tnx es 73 de Bob/KB2SGM  
(toobz, schmoobz!)

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\*\*\*\*\*  
Bob Marsh - KB2SGM <bmarsh@hicom.net> NJ-QRP #39 QRP-L #724.  
CW, QRP, Homebrew & Boatanchors - What a Mix  
"Jeez, is it REALLY supposed to do that?"  
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Date: Tue, 1 Oct 1996 19:58:42 -0400

From: W4AOS@aol.com  
To: glowbugs@theporch.com  
Subject: Re: 6V6 Xtal Osc from 1950's  
Message-ID: <961001195841\_298414577@emout03.mail.aol.com>

In a message dated 96-10-01 12:28:14 EDT Bob W7VZX writes:

<< The little rig was most unique for it was constructed on a  
<wooden chassis formed by 2 end blocks holding 2 parallel slats which  
<between them were a tube and crystal socket. The coil was wound with "BELL  
<WIRE" and used small wooden pegs or dowels verically into the chassis as a  
<form. There was a matching power supply chassis using a 5Y3.  
>>

Ah yesss! brings back memories to me. I also built one of these termite's  
delight rigs as my first rig in 1952. Rather than bell wire for the coils, I  
used dynamite wire salvaged from the rubble pile of a nearby quarry. My rig  
also started out with a 6V6, then I upgraded it to a 6L6, and finally to an  
807. To power the 807 I used two power supplies in series!, got about 800  
volts, and that thing really put out the power. That is until the power  
supplies shorted: sparks, smoke, build new rig. Being a novice was really  
fun.

Bob w4aos@aol.com

-----  
Date: Tue, 1 Oct 1996 17:08:11 +0000  
From: "Brian Carling" <bry@mail1.mnsinc.com>  
To: glowbugs@theporch.com  
Subject: Re: Tube gear (fwd)  
Message-ID: <199610020008.UAA15602@user2.mnsinc.com>

> >...I used  
> >a Type 80 rectifier and a VR-150 gaseous regulator tube and a glass  
> >6L6. It runs about 8 watts input and perhaps 5 or 6 watts out.  
>  
> By contrast, Fred Sutter c. 1940 was running a 6L6 single-tube rig at  
> 120 Watts input! (600V @ 200mA). Bet the room lit up when he sent a  
> zero!  
>  
> 73,  
> Mike, KK6GM

He he - yeah Mike, the sucker PROBABLY ARCD!  
Brian Carling in Gaithersburg, Maryland, USA  
bry@mnsinc.com

<http://www.mnsinc.com/bry/>

-----  
Date: Tue, 1 Oct 1996 17:08:11 +0000  
From: "Brian Carling" <bry@mail1.mnsinc.com>  
To: glowbugs@theporch.com  
Subject: Re: I 'ear a passle o' glowbugs about ta swarm.....(:+{}.....  
Message-ID: <199610020008.UAA15605@user2.mnsinc.com>

> the peanut whistles can ring through the  
> ether a little more clearly. I would be of the opinion that 0100EST  
> (2200PST) might be a workable time where the big boyz are gone to beddybye  
> and the glowbugs can come out and frolic.  
>  
> So, if there is any interest in such a late net (after all, as we get older  
> our needs for sleep drop, right, else the XYL be a' pickin' at us an' we  
> needs a bit o' breathin' quiet, or mebbe we just needs a gentlemen's late  
> nite pit stop, or such, so surely someone will be up then.....(:+{}.....),  
> do let me know an' mebbe there be some breathin' room fer all them thar  
> swarms o' glowbugges wat's be about, in the late nite, ta nips a few more  
> spritely holes in de ol' ether.....  
>  
> The fine winter's nite be short at hand.....  
>  
> Rotten QRM will be gone.....  
>  
> Crashing QRN will be gone.....  
>  
> Wat better time fer a run on de ol' BA/GB QRG?  
>  
> 73/ZUT DE NA4G/Bob UP

Zounds lika sorta good idea thar Bob, hmmm, I dunno if'n I kin stay  
up THAT late tho.. BUT will give 'er a try this weekend an the  
weekend of the 19th, 26th etc. if I can!

Bry, AF4K  
Brian Carling in Gaithersburg, Maryland, USA  
bry@mnsinc.com  
<http://www.mnsinc.com/bry/>

-----  
Date: Tue, 1 Oct 1996 17:08:11 +0000  
From: "Brian Carling" <bry@mail1.mnsinc.com>  
To: glowbugs@theporch.com

Subject: Re: 6V6 Xtal Osc from 1950's  
Message-ID: <199610020008.UAA15608@user2.mnsinc.com>

Don writes thusly:

> Then, the glowbug itch struck a year ago and I have been scratching ever  
> since. The 6V6 is on the air (only xtal is for 3579.5 colorburst freq)  
> and I have built a 3 tube superhet rx to go with it to make a complete  
> glowbug station. I still have the original "How To Become...." pamphlet  
> too. It is in tatters, but complete.

Sounds wonderful...

> The little glowbug will become a wallflower again when I finish my  
> VFO-Exciter (12AT7 - 6V6). That will become my bandswitching QRP rig and  
> exciter for a future 'high power' 6AG7-807 rig.

This sounds very similar to what I am about to build.  
When I get to the VFO stage though, I want to build something REALLY  
stable with temp compensation or some such scheme for preventing  
drift after a brief warmup. (I don't have time to wait 30 minutes for  
stability)

What would you recommend in terms of such a design?

> Arthur Moe KB7WW in Oregon City is also building up the little wooded 6V6  
> rig. I sent him some bell wire a year ago. So, one of these days when  
> you get yours done we should get the three of them on the air at the same  
> time.

Hey - we are talking about getting a whole bunch of us on the air!

Have you tried the WBS chat yet?  
Steve put the instructions on here about how to do it 2 days ago.  
He gets on at about 8 p.m. EST.

We had a great chat group going there ;ast night!

72 de Bry AF4K  
Brian Carling in Gaithersburg, Maryland, USA  
bry@mnsinc.com  
<http://www.mnsinc.com/bry/>

-----  
Date: Tue, 1 Oct 1996 19:20:23 -0500 (CDT)  
From: Bob Roehrig <broehrig@admin.aurora.edu>  
To: W4AOS@aol.com

Cc: Multiple recipients of list <glowbugs@theporch.com>  
Subject: Re: 6V6 Xtal Osc from 1950's  
Message-ID: <Pine.ULT.3.95.961001191703.6429A-100000@admin.aurora.edu>

On Tue, 1 Oct 1996 W4AOS@aol.com wrote:

> In a message dated 96-10-01 12:28:14 EDT Bob W7VZX writes:  
>  
> << The little rig was most unique for it was constructed on a  
> <wooden chassis formed by 2 end blocks holding 2 parallel slats which  
>  
> Ah yesss! brings back memories to me. I also built one of these termite's  
> delight rigs as my first rig in 1952.

My first rig was also basically that same design. I used a 6L6 and a "real" aluminum chassis, however. I had found some B&W plug-in coils for 80 and 40 and just hooked my long wire antenna directly to the output link. I thought it was working fine until I got a "pink slip" from the FCC for a second harmonic that was on a commercial RTTY frequency! I didn't know about such things as antenna tuners or SWR. I just tuned for max brilliance of a neon bulb near the coil.

E-mail broehrig@admin.aurora.edu 73 de Bob, K9EUI  
CIS: Data / Telecom Aurora University, Aurora, IL

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Date: Tue, 01 Oct 1996 23:58:53 EDT  
From: sigcom@juno.com (Stephen M Smith)  
To: glowbugs@theporch.com  
Subject: Re: Recycling  
Message-ID: <19961001.154840.9535.0.sigcom@juno.com>

On Tue, 1 Oct 1996 14:58:17 -0500 (CDT) BA Bob writes:  
=snip= a good source of xtal sockets for glowbugs is old Motorola tube  
> gear that noone even in the vhf crowd is willing to fix anymore.

Yep, but the all tube stuff is getting pretty scarce these days. Also look to these rigs for tubes and tube sockets. Look especially for Low Band (30-50 mHz) and High Band (140-170 mHz) gear. Most of those radios used the 12 volt equivalent 2E26 and 6146 tubes in the drivers and finals. The 100 Watt low band transmitters used two in the final. The high band 60 Watt version used one. (Higher power high band transmitters used a tube like the 829B). The last of the all tube rigs used lots of 7 and 9 pin tubes in the receivers, and would yield a good selection (12AT7s, 6U8s, 6C4s and 6AQ5s come to mind). Crystal sockets will



usually be dual types because the plug in ovens were 4-pin. Some of the receiver second oscillator sockets were ceramic, nice. If you're into Loctal tubes, some of the mobiles and most of the bigger base stations used these in the transmitters. The base station power supplies are perfect for GB home brew transmitters, nice big transformers, chokes and capacitors.

Happy scrounging,

73.....Steve, WB6TNL

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Date: Wed, 2 Oct 1996 11:45:04 -0400 (EDT)  
From: rdkeys@csemail.cropsci.ncsu.edu  
To: bry@mail1.mnsinc.com  
Cc: rdkeys@csemail.cropsci.ncsu.edu (), glowbugs@theporch.com  
Subject: Re: 6V6 Xtal Osc from 1950's etc.  
Message-ID: <9610021545.AA101332@csemail.cropsci.ncsu.edu>

> This sounds very similar to what I am about to build.  
> When I get to the VFO stage though, I want to build something REALLY  
> stable with temp compensation or some such scheme for preventing  
> drift after a brief warmup. (I don't have time to wait 30 minutes for  
> stability)  
>  
> What would you recommend in terms of such a design?

Brian, et al.....

There are two basic designs that are going to be of merit for a VFO, from any era.

The first is James B. Dow's classic Electron Coupled Hartley Oscillator (ECO) (C.F. QST about 1933), which was used extensively through about 1955 by hams, the military, and commercial interests. This is probably the simplest stable vfo to get going, but it requires a tapped oscillator coil (not much of a problem) to obtain the proper oscillatory feedback for operation. It also should be a HI-C design (i.e., it should use lots of capacitance in the grid tuning circuit) for stability. The output is usually an RF choke into the following stage.

The second is Clapp's oscillator (forget his whole name but James K. Clapp is what comes to mind right off), which is a variant of the earlier Colpitt's oscillator design. This was used from about 1950 through the end of the vacuum tube era. The Clapp oscillator uses a Colpitts style divider circuit to obtain proper oscillatory feedback. But, it then differs from the Colpitts design by using a SERIES capacitor and coil

with relatively large L and low C. This is slightly more stable than the ECO Hartley and some consider it easier to make and adjust and to have a wider tuning range. It also has a more uniform driving output across a wide tuning range.

In my book, I would place my bet with the ECO Hartley or Hi-C design because it can be padded with sufficient capacitance across a relatively small tuning capacitor so that the net effect is bandspreading the entire CW band easily across a dial. That makes for much smoother tuning than with the Clapp design. A wide tuning range is really not important if you are just driving a CW rig, since the band you mostly use is going to be maybe at most 200khz and usually less than 100khz.

For an oscillator tube, almost any pentode will work. For oldish style glowbugging, the usual tube would be something like a 6AG7 pentode or a 6F6/6L6/12A6 beam power tube. The pentode is a little more stable than the beam power tube, because of better grid isolation. But, practically, they all will work fine.

It is important to have a smooth capacitor, for good action in tuning and less propensity to jumping as the thing is moved about.

It is important to have a good oscillator coil, wound on a thermally stable form such as isolantite or alsimag ceramics. In a pinch, a good thick walled pvc or acrylic tube will work, but may drift slightly more on warmup than the ceramic forms.

It is important to have a sufficiently large oscillator coil box to not have stray capacitance/inductance effects. The usual rule of thumb is to have the coil box at least 2 times the size of the coil itself. If the coil is 6 inches long, then the optimum box is at least 12 inches in length. If the coil is 2.5 inches in diameter then the optimum box is at least 5 inches in width. You can get by with lesser length, down to about 1.5 times the coil length, but don't use less than 2 x coil diameter for the width of the box.

It is important to have a stable screen power supply. The screen forms the plate of the triode oscillator section, so should be stiff and usually is regulated by a small VR tube. Alternatively, you can regulate the plate circuit and use a dropping resistor off the plate circuit for the screen supply. Exotic folks sometimes use a regulator string such that the plate gets 300 volts and the screen 150 volts through the use of two VR-150 tubes, for example. There is some interaction in stability under load of the screen and plate voltages. James Dow, suggested about a 1x3 ratio for screen to plate voltage, although that will depend upon the oscillator tube used. He used 75 watt pentodes which have slightly different requirements than the usual 5 watt 6AG7. It should also be noted that tubes as big as the 803 (a 125 watt tube) can be used quite

easily as stable VFO's but the power regulation needs to be pretty good on something that big. It should be fairly easy to make a good 15 watt or so power vfo out of a 6146, for example if the proper plate and screen voltages were used. Most of the usual rigs, though will not handle that kind of input to the xtal oscillator stage. Thus a 6AG7 sized tube is much more appropriate for glowbugging, under most conditions.

It is important to have a good grid biasing resistor (use one of 2 watt size if possible), and good grid biasing capacitor(s) (use good transmitting tub caps rated at 2kv or use good ceramic caps if you have them or lastly use good silver micas. I place my bet on the larger transmitting caps if at all possible over the silver micas, for better stability.

For coupling the oscillator to a following stage, a 2.5mh rf choke is entirely adequate with a 100-500pf coupling capacitance (usually 100pf is fine). If tuned coupling is desired, the best approach is to use a pi-net as the output from the oscillator to the next stage. It can be set up for coax output to 50 ohms rather generically with about 500-1000pf on the output side (depending upon the constants used in the pi-net, although 500pf is usually fine). An adjustable pi-net is better if you need to use it to control the grid drive of the following stage.

As with any oscillator GOOD HEAVY CONSTRUCTION IS A MUST! It must look and feel and WEIGH like a boat anchor for best stability. Use no. 14 wire as the smallest size for wiring it up, and larger if necessary. Make all connections secure and properly soldered. Bad connections kill oscillators. It MAY look good, but if it is unstable in the least, hit it with a pencil and eraser using the eraser as a small mallet and you will quickly spot any offending connections (use low voltage on the plate for such testing, perhaps 48 volts or so, or just sufficient to get it to oscillate well).

Good Luck

73/ZUT DE NA4G/Bob UP

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Date: Wed, 2 Oct 1996 07:36:19 -1000 (HST)  
From: dabell@aloha.net (David and Shari Abell)  
To: glowbugs@theporch.com  
Subject: Homebrewing sites  
Message-ID: <199610021736.HAA24063@haleakala.aloha.net>

Does anyone know of any other homebrewing reflectors, sites or newsgroups?

Thanks in advance for your help.

David Abell, WH6OL

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With warm aloha,  
D A V I D   A N D   S H A R I   A B E L L  
P.O. Box 974  
Kalaheo, Kauai, Hawaii 96741  
e-mail: dabell@aloha.net

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End of GLOWBUGS Digest 310  
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